

# Extreme-Ultraviolet Spectroscopy of Nearby B-Stars: Testing Models of Cosmic Reionization

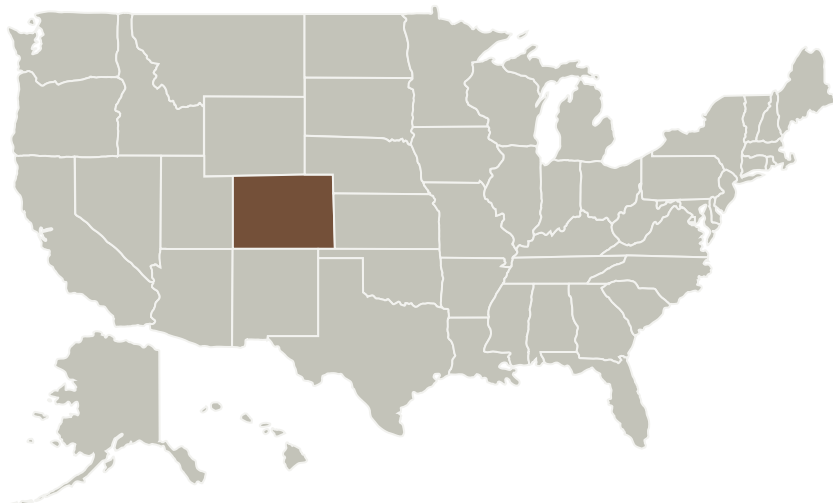
Completed Technology Project (2015 - 2018)



## Project Introduction

This is a four-year sounding rocket investigation focusing on the extreme-ultraviolet (EUV; 500 - 1150 Å) spectrophotometry of nearby B-stars. Our observations will not only provide powerful constraints on stellar atmosphere models, but also provide key insights towards understanding the reionization of the early universe. The critical region from 700 - 900 Å, where the ionization cross section for neutral hydrogen is at its greatest, has never been observed for any B stars, nor is there any planned instrumentation to cover this waveband. Therefore, a sub-orbital mission is the ideal program to accomplish this science. We will develop a sounding rocket payload called DEUCE – the Dual-channel Extreme Ultraviolet Continuum Experiment. The proposed program addresses NASA's strategic goals by: A) making unique observations relevant to the physics of re-ionization; B) demonstrating the space worthiness of a new class of ultraviolet detectors, and C) training the next generation of NASA space-mission scientists and PIs

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
University of Colorado Boulder	Supporting Organization	Academia	Boulder, Colorado



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## Organizational Responsibility

### Responsible Mission Directorate:

Science Mission Directorate (SMD)

### Responsible Program:

Astrophysics Research and Analysis

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## Primary U.S. Work Locations

Colorado

## Project Management

### Program Director:

Michael A Garcia

### Program Manager:

Dominic J Benford

### Principal Investigator:

James C Green

### Co-Investigators:

John T Stocke

Kevin France

## Technology Areas

### Primary:

- TX08 Sensors and Instruments
  - └ TX08.3 In-Situ Instruments and Sensors
    - └ TX08.3.6 Extreme Environments Related to Critical System Health Management

## Target Destination

Outside the Solar System